CLAIMS

What I claim as my invention is:

1. A method for achieving worldwide reduction of carbon dioxide emissions and worldwide reduction of deforestation characterized by providing for many people the steps for casu quo the opportunity for earning casu quo accruing emission rights casu quo emission credits casu quo tradable emission rights casu quo tradable emission credits casu quo tradable carbon dioxide emission rights casu quo tradable carbon dioxide emission credits, the value of which rights casu quo the value of which credits can be monetized for paying wholly or partly for the cost of said method and for the cost of an apparatus qualified for casu quo licensed for said accruing of said rights casu quo for said accruing of said credits and/or for alternately casu quo additionally creating a source of ongoing revenue for users of said method and apparatus and/or for governments and/or organizations that promote the introduction and ongoing use of the method and apparatus of the present invention, said method being further characterized in operation by a synergic combination of augmented net to food cooking power on sunlight with augmented net electricity generating power on sunlight, thereby augmenting convenience of cooking and/or electricity generation on sunlight to such a high level that many people are induced to substitute carbon containing fuels for lighting and/or cooking by sunlight and in so doing said people are avoiding exposure to harmful emissions causing widespread lung and eye diseases and said people are rewarded by affordable access to electricity, entertainment, education and improved health, said method furthermore being characterized in operation by the steps for greatly accelerating and greatly augmenting net to food cooking power and/or net electric power from sunlight at all solar altitude angles, especially so at low solar altitude angles, resulting in better quality meals through shorter cooking times casu quo resulting in shorter battery charging times, conveniently resulting in reduced sun tracking labor, more frequent and more varied usefulness during prolonged periods of usefulness and more widespread usefulness over wider latitudes, the foregoing favorable characteristics resulting from compounding power augmentation contributions by a sequence of individual inventive net to food cooking power augmentation steps and/or net electric power augmentation steps, the method comprising:

(a) the step for acquiring sunlight onto PV cells, assembled into modules, hereinafter called PV cell modules and/or through approximately horizontal transparent surfaces, hereinafter called first window casu quo windows and second window casu quo windows, positioned approximately side by side above a concave reflective cavity casu quo cavities of approximately half-barrel shape having its axis of rotation parallel to the meeting line of said

first window with said second window and being capable of reflectively directing a major part or all of sunlight acquired by said first window to the underside of said second window, said second window transmitting said acquired sunlight onwards to a highly heat conducting underside of a well insulated cooker cavity casu quo a plurality of said cooker cavities, positioned above said second window, thereby providing augmented net to food cooking power to food, positioned on said highly heat conducting underside of said cooker cavity; and

(b) the step for acquiring additional sunlight onto an adjustably tiltable and adjustably bendable reflector casu quo mirror, positioned with lower hinge means near the outer casu quo the external edge of said first window, parallel to the axis of rotation of said half-barrel shaped concave reflective cavity, said mirror hereinafter called bendable mirror, said bendable mirror being capable of having variable tilt angle and variable curvature, enabling said bendable mirror to reflectively direct a major part or all of said additionally acquired sunlight onto a PV cell module and/or through said first window with more favorable angles of light incidence for onward reflective transport of said sunlight to the underside of said second window for upward transmission of said sunlight through said second window to said heat conducting underside of said cooker cavity casu quo plurality of cooker cavities, positioned above said second window, thereby providing further augmented and accelerated net to food cooking power to food, positioned on said highly heat conducting underside of said cooker cavity casu quo said plurality of cooker cavities, said step for acquiring additional sunlight also comprising the step for providing guide means for simple, accurate azimuth tracking and comprising also the step for providing one or more shadow-casting rods casu quo beads communicating in shadow-casting manner with said bendable mirror and said PV cell module casu quo said first window and comprising furthermore the step for providing a guide rail casu quo for providing a plurality of guide rails, equipped with a mirror bending by mirror compression profile casu quo equipped with a plurality of mirror bending by mirror compression profiles and mirror position marker means and/or mirror position holding means enabling positioning of said adjustably tiltable and adjustably bendable mirror in a simple, reproducible manner in optimum mirror tilt angle and optimum mirror curvature for optimum acquisition of additional sunlight at every solar altitude angle prevailing at a relevant time of the day, day of the year and latitude and for optimum instantaneous reflective direction of a major part or all of said additionally acquired sunlight onto said PV cell module and/or onto said first window with more favorable angles of incidence onto said PV cell module thereby providing further augmented and accelerated PV cell power and/or onto said first window for onward transmission of said additionally acquired sunlight via said half barrel shaped concave

reflective cavity and through said second window to said highly heat conducting underside of said cooker cavity casu quo a plurality of said cavities positioned above said second window, thereby providing still further augmented and accelerated net to food cooking power to food, positioned on said highly heat conducting underside of said cooker cavity casu quo said plurality of cooker cavities; and

(c) the step for acquiring further additional sunlight onto a PV cell module casu quo modules, positioned on a rocking rack supported in a hanging manner by hinge means attached parallel to said lower hinge means of said bendable mirror to an upper edge of said rocking rack and the edge of the structure of the apparatus furthest away, parallel to and at the level of said lower hinge means of said bendable mirror, said PV cell module hereinafter called rocking module being compelled by said additional sunlight acquiring movements of said bendable mirror and/or said structure of the apparatus to track the sun in a two-axis tracking manner for optimum acquisition of said further additional sunlight with favorable angles of incidence onto said rocking module casu quo rocking modules at all times and latitudes; and

(d) the step for acquiring still further additional sunlight onto and through a third approximately horizontal transparent surface, hereinafter called third window, provided and positioned above a well insulated cover cavity casu quo a plurality of cover cavities provided with the same dimension as said cooker cavity, said cover cavity being positioned in mirror-image casu quo upside down arrangement above casu quo on top of said cooker cavity casu quo said cooker cavities, said third window transmitting said acquired still further additional sunlight to a highly heat conducting topside, positioned under said third window of said cover cavity, furthermore providing the surface, illuminated when in operation of said highly heat conducting topside of said cover cavity with said spectrally selective coating possessing said high absorptivity for said acquired further additional sunlight and possessing low emissivity for radiation of infrared light casu quo radiation of heat from said illuminated spectrally selective surface, said spectrally selective surface enabling instant conversion of a major part or all of the energy contained in said acquired still further additional sunlight to heat, heat being conducted instantly, with minimum resistance through said highly heat conducting topside of said cover cavity from where heat is radiated to foods, beverages or any materials positioned in the cavity under casu quo below said highly heat conducting topside of said cover cavity, thereby providing still more augmented net to food cooking power to said foods, beverages or other materials; and

(e) the step for acquiring optimum quantities of sunlight onto said PV cell module, onto said tiltable and bendable mirror and onto and through all said windows by enabling in one movement easy and accurate aiming of the whole apparatus comprising said PV cell module, said mirror and all said windows at the sun by a person conveniently standing in the shade behind said tiltable and bendable mirror; and

(f) the step for converting instantly a major part or all of the energy contained in said acquired and additionally acquired sunlight reaching said PV cell module to electricity and/or converting said sunlight reaching said highly heat conducting underside of said cooker cavity to heat by means of a spectrally selective coating deposited on the surface illuminated when in operation, said spectrally selective coating possessing high absorptivity for said reflectively transmitted sunlight, said coating possessing low emissivity for radiation of infrared light casu quo radiation of heat from said illuminated spectrally selective surface, said spectrally selective surface enabling instant conversion of said light energy to heat, said heat being conducted instantly with minimum resistance through said highly heat conducting underside of said cooker cavity, thereby providing greatly augmented net to food cooking power to food, positioned in intimate heat conducting communication on said highly heat conducting underside of said cooker cavity casu quo said plurality of cooker cavities; and

(g) the step for storing said electricity generated by said PV cell modules in a battery casu quo in batteries, said battery casu quo batteries preferably being positioned within the structure of said apparatus, said battery casu quo batteries simultaneously serving as ballast, providing wind stability; and

(h) the step for acquiring optimum quantities of sunlight onto said selective surfaces by providing reflective surfaces on the inner walls of said support frames of said absorbers casu quo said trays, said reflective surfaces serving simultaneously as reflective insulation against heat losses from said trays to the ambient; and

(i) the step for reducing heat losses by providing insulation on the outer walls of said support frames of said absorbers casu quo said trays, said insulation possessing reflective surfaces; and

(j) the step for reducing heat losses by temporarily positioning insulating slabs over the tops of said trays casu quo said cooker cavities apertures, said insulating slabs possessing reflective surfaces; and

(k) the step for reducing heat losses by providing insulation on the outside surfaces of said reflective walls of said half-barrel shaped concave reflective cavity; and

(l) the step for reducing heat losses by installing reflective wind shields perpendicular to said lower hinge means of said bendable mirror on both sides of and upwards from said first window, optionally for convenience also from said second window; and

(m) the step for reducing heat losses, simultaneously protecting spectrally selective surfaces by providing thin sheets of a highly transparent material, such as for example a fluorocarbon polymer such as Teflon FEP®, one of said thin sheets being installed at some distance under said highly heat conducting underside of said cooker cavity, thereby providing protection to said spectrally selective surface coated on said highly heat conducting underside simultaneously providing two insulating air chambers between said spectrally selective surface and said second window, thereby reducing heat losses and providing still more net to food cooking power, another of said thin sheets being installed at some distance above said highly heat conducting topside of said cover cavity, thereby providing protection to said spectrally selective surface coated on said highly heat conducting topside of said cover cavity and providing two insulating air chambers between said spectrally selective surface and said third window, thereby reducing heat losses and providing still more net to food cooking power; and

(n) the step for improving heat transfer to foods, beverages or any other materials, simultaneously reducing surface temperatures of light absorbing surfaces, conveniently reducing radiant and convective heat losses from said light absorbing surfaces by executing casu quo forming casu quo shaping said highly heat conducting underside of said cooker cavity, optionally also of said highly heat conducting topside of said cover cavity as concave trays, said concave trays together enclosing a cavity suitable for positioning foods casu quo beverages directly on the lower one of said concave trays, for cooking casu quo heating said foods casu quo beverages, while in direct, intense, intimate heat conducting communication with said highly heat conducting underside casu quo concave tray of said cooker cavity as heat source, said concave trays having been provided on their convex surfaces, the surfaces illuminated when in operation, with said spectrally selective coating, net to food heat transfer coefficients being improved compared to prior art cooking in vessels by an order of magnitude, thereby providing greatly augmented net to food cooking power; and

(o) the step for enabling fast response to available solar radiation by providing improved angles of incidence for solar radiation onto said PV cell modules and/or onto said windows and by reducing thermal inertia of cooking operations by cooking foods casu quo heating beverages directly on casu quo in a highly heat conducting thin-walled light-weight low-thermal inertia cooking tray casu quo a plurality of cooking trays having a spectrally selective

coating on its casu quo their convex outer surface, characterized in operation by instantly reacting positively to acquired sunlight, instantly converting said sunlight to heat, simultaneously delaying heat losses by temperature-dependent heat radiation, said cooking tray casu quo trays, while in operation, furthermore being characterized by being in whole tray surface contact casu quo intimate highly heat conducting communication with foods casu quo beverages positioned directly on said tray casu quo trays, resulting in augmented energy fluxes from acquired light to food, while simultaneously reducing temperatures of light-absorbing surfaces, resulting in reduced heat losses enabling providing still more and faster augmented net to food cooking power; and

(p) the step for enabling the cooker cavity to warm up to a temperature of convenience for the food being cooked, shielding partly or wholly said first and/or third window with said insulating slabs whenever temperature threatens to exceed allowable temperature limits for food casu quo cooker materials; and

(q) the step for enabling supervision of cooking progress and/or performing stirring casu quo food turning operations conveniently by lifting off momentarily said cover cavity casu quo said insulating slab, heat continuing to be supplied to said food from below by said first heat conducting tray; and

(r) the step for enabling continued cooking casu quo warm-keeping of hot foods in late solar afternoons when the sun goes down and ambient temperature drops and enabling warm-keeping of cooked foods on the eating table casu quo eating place by serving said cooked food in said first tray, kept warm by said insulation on said outer walls of said support frame of said tray and by said insulating slab over the aperture of said tray; and

(s) the step for enabling cooking operations casu quo warm-keeping of hot foods by means of a halogen light source, electricity being supplied for example from a battery charged by said PV cell modules; and

(t) the step for enabling augmented electricity generation alternating with casu quo simultaneously with casu quo independent of cooking operations by positioning PV cell modules under casu quo sideways from said bendable mirror for optimum irradiation of PV cell modules by said bendable mirror; and

(u) the step for enabling cooling of PV cell modules by providing under said PV modules an air channel communicating with air channels casu quo chimneys incorporated in casu quo on said bendable mirror; and

(v) the step for enabling varied cooking operations, cooking foods directly on said trays, for example of the classical type, the steam-cooking type, the stir-frying type, the baking type, the grilling type; and

(w) the step for enabling water purification by heat and light by providing said first tray, optionally also said second tray, as a highly light transparent tray made of an anti-reflectively coated low-iron glass or a polymer, such as for example polyethylene terephthalate (PET) / polybutylene terephthalate (PBT), acrylic, polycarbonate; and

(x) the step for enabling cooking of soups, heating water casu quo other liquids in a cooker cavity positioned in approximately vertical position in said half-barrel shaped concave reflective cavity, parallel to said axis of rotation of said half-barrel shape, said cooker cavity having an opening in its top for receiving liquids and preferably having said spectrally selective surfaces as all of its outside surfaces, facing light, transmitted from all sides by said transparent low iron glass cavity casu quo said transparent polymer cavity, positioned at an optimum distance around said cooker cavity; and

(y) the step for enabling purification of drinking water by heat and light by means of a light transparent glass or polymer cavity, suitable for holding water, positioned approximately vertically in said half-barrel shaped concave reflective cavity parallel to said axis of rotation of said half-barrel shape, said transparent cavity being also capable of receiving casu quo accommodating transparent glass or polymer bottles holding water; and

(z) the step for protecting PV cell modules, glazings of said windows and other cooker materials upon finalizing operations, by providing said bendable mirror with dimensions at least sufficient in horizontal (off-duty) flat position to cover and protect itself and said cooker structure, said windows casu quo trays and said PV cell modules against overheating, hail, rain, dust or sand storms, winds, debris, vandalism and the like.

2. The method of claim **1**, further comprising the step for organizing and implementing a quality assurance mechanism casu quo program for supervising the manufacture casu quo the production of said solar cookers/solar electricity generators whereby said cookers/generators can be certified casu quo qualified for the accrual of emission credits casu quo for the accrual of tradable emission rights comprising tradable carbon dioxide emission rights/credits and can be provided with registration numbers casu quo country and/or state license plate numbers qualifying said cookers/generators for the accrual of said emission credits/tradable emission rights in the countries and/or states where said cookers/generators are going to be used.

3. The method of claim **1**, further comprising the step for earning casu quo accruing emission credits casu quo tradable emission rights and/or credits for operating a solar

cooker/solar electricity generator on sunlight qualified for casu quo registered for casu quo licensed for the accrual of tradable emission rights/credits comprising tradable carbon dioxide emission rights/credits thereby substituting carbon containing fuels by sunlight for cooking and/or water heating and/or electricity generation.

4. The method of claim **3**, further comprising the step for keeping a record of cooking and/or electricity generating operations on sunlight and submitting said record at regular intervals to a designated entity for emission credits.

5. The method of claim **4**, further comprising the step for offering casu quo selling said earned casu quo accrued emission credits casu quo tradable emission rights comprising tradable carbon dioxide emission rights/credits to a willing buyer.

6. The method of claim **4**, further comprising the step for gathering casu quo accumulating casu quo amassing a plurality casu quo a multitude of said earned emission credits casu quo tradable emission rights comprising tradable carbon dioxide emission rights/credits by an entity such as for example a state, a nation, an organization, a charity, a business, an exchange into larger marketable packages and offering casu quo selling said marketable packages to prospective buyers casu quo to willing buyers.

7. Earning casu quo accruing emission credits casu quo tradable emission rights accruing from emissions avoided by practicing any and/or all of the steps for the method of claim **1**.

8. Earning casu quo accruing carbon dioxide emission credits casu quo tradable carbon dioxide emission rights accruing from carbon dioxide emissions avoided by practicing any and/or all of the steps for the method of claim **1**.

9. Earning casu quo accruing emission credits casu quo tradable emission rights accruing from emissions avoided by practicing any and/or all of the steps for the method of claim **1,** using apparatus provided with registration numbers casu quo country and/or state license plate numbers qualifying said apparatus for accrual of emission credits casu quo tradable emission rights.

10. Earning casu quo accruing carbon dioxide emission credits casu quo tradable carbon dioxide emission rights accruing from carbon dioxide emissions avoided by practicing any and/or all of the steps for the method of claim **1,** using apparatus provided with registration numbers casu quo country and/or state license plate numbers qualifying said apparatus for accrual of carbon dioxide emission credits casu quo tradable carbon dioxide emission rights.

11. Apparatus comprising hot box type light cooker means, tiltable and bendable mirror means, half barrel shaped concave reflective cavity means and rocking PV cell module means, said means being characterized in operation by their aptitude casu quo their ability for

acquiring optimized quantities of sunlight into casu quo onto said apparatus for converting instantly said acquired sunlight to greatly augmented net to food heat power and simultaneously to greatly augmented net electric power, said light cooker means being made up of two complementary cavity means, having an approximately horizontal lower transparent aperture, hereinafter called second window means, for acquiring reflected light onto and through transparent sheet means casu quo plate means and onwards onto a lower light to heat converting surface means being the underside of a highly heat conducting approximately horizontal tray means casu quo plate means, hereinafter called first tray means and having an approximately horizontal upper transparent aperture, hereinafter called third window means for acquiring direct sunlight onto and through transparent sheet means casu quo plate means and onwards onto an upper light to heat converting surface means being the topside of a highly heat conducting approximately horizontal inverted casu quo upside down tray means casu quo plate means, hereinafter called second tray means for radiating heat to food positioned below said second tray means, said first and second tray means comprising tray support means having insulated outer walls and possessing reflective surface means on inner walls facing said tray means and having reflective surface means on any outer walls casu quo outer walls of insulation facing reflected light, the apparatus further comprising:

(a) additional approximately horizontal transparent aperture means, hereinafter called first window means, positioned directly sideways next to said second window means for acquiring sunlight and additional casu quo reflected sunlight for further transmission via approximately half-barrel shaped concave reflective cavity means to and through said second window means to said light to heat converting underside of said first tray means; and

(b) insulated lower mirror means of approximately half-barrel concave shape having its axis of rotation parallel to the meeting line of said first window means with said second window means, said half barrel being provided with insulation means around the convex outside surface casu quo on the flat outside surfaces, said lower mirror means, hereinafter called half-barrel shaped concave reflective cavity means for reflectively transporting said sunlight and said additional sunlight, acquired onto and through said first window means to the underside of said second window means and onwards to said lower light to heat converting surface means on the underside of said highly heat conducting first tray means, said half-barrel shaped concave reflective cavity means, preferably being of a flexible reflective sheet casu quo foil material and further having means for vertical and/or horizontal variation of the position of the nadir line casu quo the lowest line parallel to the axis of rotation of said half-barrel shaped concave reflective cavity means, for optimum reflective performance, for

example from shallow to deep catenary, circular, parabolic, elliptic casu quo polygonal shape or any combination of said shapes, for varied reflective tasks, deeper half-barrel shapes generally resulting in more favorable angles of incidence of said sunlight and said additional sunlight onto and through said second window means and subsequently onto said light to heat converting surface means on the underside of said first tray means, said half-barrel shaped concave reflective cavity means having drain hole means on said nadir line for removal of incursions of rain, food spills or any other kind, said half-barrel shaped concave reflective cavity means optionally also having roll means for storing and/or rolling on of said reflective sheet material casu quo foil material for convenient cleaning of said reflective surface of said half barrel shaped concave reflective cavity means, the two reflective end walls perpendicular to said axis of rotation of said half-barrel shaped concave reflective cavity means also being made of said flexible reflective sheet material casu quo foil material, alternatively of semi-rigid casu quo rigid reflective material; and

(c) upper mirror means, casu quo upper reflector means, hereinafter called bendable mirror means, positioned with lower hinge means near the far side of said first window means, the side furthest away from said second window means, said bendable mirror means being a hinged, adjustably tiltable and adjustably bendable mirror capable of having variable tilt angle and variable curvature, for optimum acquisition and optimum reflective direction of said additional sunlight onto and through said first window means casu quo onto a PV cell module means positioned at about the locus of said first window means; and

(d) bendable mirror guide rail means possessing mirror indicator means for mirror tilt angle, mirror holding means for maintaining mirror in a chosen position and mirror compression profile means for compression of said bendable mirror means to a curvature optimized for the ratio of said bendable mirror height to said first window width, said bendable mirror guide rail means enabling in one operation casu quo one movement the positioning of said bendable mirror means and said rocking module means in the most favorable combination of mirror tilt angle and corresponding mirror curvature at any prevailing solar altitude angle for optimum acquisition and onward reflective direction of said additional sunlight with superior angles of incidence onto said first window means and for optimum acquisition of said further additional sunlight with favorable angles of incidence onto said rocking module means; and

(e) rocking PV cell module means for converting sunlight to electricity, said rocking module means being positioned during cooking operations on a rocking rack means, rocking parallel to said bendable mirror means at about the locus of the edge of said second window

means parallel to and furthest away from said bendable mirror means, said rocking module means being also suitable for being positioned during off-cooking intervals under said bendable mirror means at the locus of said first window means for optimum acquisition of sunlight onto said PV cell module means for augmented generation of electricity; and

(f) pivoted sliding lever means casu quo sliding rocker arm means, hereinafter called rocker arm means, rigidly connected at one end by a crossbar means equipped with hinge means for suspending said bendable mirror means in a rocking manner, said rocker arm means being connected at their other ends by a shaft means equipped with roll means for tracking a bendable mirror compression profile means and equipped with pivot means for pushing and pulling connecting rod means, said rocker arm means also being equipped at a convenient distance from said shaft means with slot plate means casu quo slot means made of a rigid wear resistant material for holding said rocker arm means in rocking and sliding communication with and on pivot means installed on the structure means of the apparatus approximately at the locus of the axis of said lower hinge means of said bendable mirror means; and

(g) connecting rod means for connecting said pivot means on said shaft means with pivot means installed on said rocking rack means supporting said rocking module means, thereby enabling simultaneous positioning of said bendable mirror means and said rocking module means for optimum acquisition of sunlight; and

(h) rope means for connecting suitable points on said rocker arm means via pulley means installed on support means extending from the structure means of said apparatus at a level above said rocking rack means with suitable points of engagement on said rocking rack means, thereby enabling simultaneous positioning of said bendable mirror means and said rocking module means for optimum acquisition of sunlight; and

(i) gnomon means, installed on the lower edge of said rocking rack means for optimization of tilt angles of said rocking module means; and

(j) cooling means for cooling of PV cell module means positioned under said bendable mirror means, said cooling means comprising a cooling air channel means under said PV cell module means, said cooling air channel means being in cooling air draft communication via a flexible connection channel means with an upwards flow air channel means casu quo a plurality of upwards flow air channel means casu quo chimney means incorporated into casu quo onto said bendable mirror means; and

(k) battery means for storage of electricity generated by said PV cell module means, said battery means simultaneously serving as ballast means; and

(l) electrical conduit means for electricity transport from said PV cell module means to said battery means; and

(m) insulated halogen light means of dimensions fitting said cooker cavity means, for enabling continued cooking casu quo warm-keeping of cooked foods towards casu quo after sunset casu quo during intervals of insufficient sunshine; and

(n) electrical conduit means for electricity transport from said battery means to said halogen light source means; and

(o) insulating slab means for reduction of heat losses from said cooker cavity means towards casu quo after sunset casu quo during intervals of insufficient sunshine casu quo when cooking above a halogen light source means casu quo when said cooker tray means with cooked food are on the eating table or eating place; and

(p) temperature indication means for simple accurate reading of cooker cavity means contents temperature casu quo for protection of cooker means materials against overheating; and

(q) stretchable casu quo elastic cord means installed between said cross bar means and said reflective windshield means for enabling in operation the upholding of said windshield means and for enabling simple, accurate azimuth tracking of the sun by the apparatus during a solar day, said cord means being maintained in light shading communication onto said rocker arm means casu quo the vertical edges of said bendable mirror means, said elastic cord means being conveniently equipped with one or more shadow-casting rod means casu quo shadow-casting bead means whereby their shadow cast on said first window means at the locus of the meeting line between said first window means and said second window means is indicative of an optimum position of said bendable mirror means; and

(r) rocking rack means for supporting casu quo holding said rocking PV cell module means; and

(s) hinge means for supporting in a rocking manner said bendable mirror means, said rocking rack means, said reflective windshield means and said booster mirror means; and

(t) shaft means for connecting said rocker arms, said shaft means being equipped with a rocking handlebar means with grip means and equipped with roll means for accurate tracking of said bendable mirror compression profile means installed on casu quo in said guide rail means casu quo said guide rail plate means and equipped with shaft end means casu quo pivot means with roll means for controlled pushing casu quo pulling of said connecting rods means; and

(u) cross bar means for rigidly connecting said rocker arm means and for supporting said upper hinge means whereon said bendable mirror means is suspended in a rocking manner; and

(v) guide rail plate means for the accurate positioning and bending of said bendable mirror means and made of rigid wear resistant material means and incorporating said bendable mirror compression profile means casu quo curve means, for accurately accommodating said roll means on said shaft means connecting said rocker arm means, said guide rail plate means being equipped with a series of line means at desired degree intervals in a sundial manner for accurately indicating the tilt angle of said rocker arm means casu quo of said bendable mirror means, said guide rail plate means being installed in a structurally rigid manner on the structure means of the apparatus below and perpendicular to the axis of said lower hinge means of said bendable mirror means, said guide rail plate means also being equipped with punched-in registration number means casu quo country and/or state license plate number means qualifying said apparatus for accrual of emission credits casu quo for accrual of tradable emission rights, casu quo tradable carbon dioxide emission credits; and

(w) reflective windshield means for reducing heat losses, installed perpendicular to the axis of said lower hinge means on both sides casu quo on both edges of said first window means; and

(x) wheel means, for ease of positioning casu quo moving of said apparatus; and

(y) structure means for said apparatus, comprising a stable support structure means properly ballasted for wind stability for maintaining said rocker arm pivot means and said guide rail plate means casu quo said guide rail means in a stable rigid position on the apparatus; and

(z) bendable mirror means having dimensions sufficient in horizontal (off-duty) flat position for covering and protecting itself and the structure means of the apparatus including transparent window means, cooker tray means and PV cell module means against stagnant overheating, hail, rain, dust, sandstorms, winds, debris, vandalism and the like.

12. The apparatus of claim **11**, wherein the height of said tiltable and bendable mirror means is from about the width of said first window means to about ten times the width of said first window means.

13. The apparatus of claim **11**, wherein said tiltable and bendable mirror means comprises air channel means casu quo a plurality of air channel means casu quo air chimney means for enhancing cooling air draft for cooling PV cell module means positioned under casu quo below said tiltable and bendable mirror means.

14. The apparatus of claim **11**, wherein the width of said first window means is from about the width of said second window means to about three times the width of said second window means.

15. The apparatus of claim **11**, wherein the depth casu quo the dimension in vertical direction of said half-barrel shaped concave reflective cavity means is from about half the width of said first window means to about three times the width of said first window means.

16. The apparatus of claim **11**, wherein said bendable mirror guide rail means casu quo said bendable mirror guide rail plate means possess bendable mirror compression profile means for exerting no compression for a bendable mirror means in flat shape and/or for exerting mirror compressions equal to or greater than about

$$C_m = h_m \times \left[\frac{.01744\,(90°-s_m°)}{\text{sine}\,(90°-s_m°)} - 1 \right]$$

for a bendable mirror means in bent condition for compelling bendable mirror means compression from zero in flat condition to compelling said mirror means compressions equal to or greater than about $C_m = h_m \times \left[\frac{.01744\,(90°-s_m°)}{\text{sine}\,(90°-s_m°)} - 1 \right]$ for a bendable mirror means in bent condition and for compelling bendable mirror means curvatures having a radius from infinite for a bendable mirror means in flat shape to radii equal to or smaller than about $r_m = \frac{h_m \cdot C_m}{2\,\text{sine}(90°-s_m°)}$ for a bendable mirror means in bent condition for optimum acquisition of additional sunlight onto said PV cell module means casu quo onto and through said first window means.

17. The apparatus of claim **11**, wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means, said metal alloy comprising any and/or all of the elements iron, chromium, nickel, molybdenum, titanium, manganese, aluminum, copper, tin, zinc, carbon.

18. The apparatus of claim **11**, wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means provided with casu quo coated on at least one surface, the surface when in use exposed to light, with a spectrally selective coating.

19. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means painted casu quo enameled on at least one surface, the surface when in use exposed to light, with a non-selective coating casu quo a black paint.

20. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means coated casu quo enameled on one surface, the surface when in use in contact with foods, with a non-stick coating, such as for example a fluorocarbon polymer coating such as Teflon®.

21. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means formed into tray means of shapes and dimensions fitting a desired cooker cavity means.

22. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise flat metal alloy plate means having dimensions fitting a desired cooker cavity means.

23. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise metal alloy tray means casu quo metal alloy plate means, the metal alloy comprising a stainless steel alloy coated on at least one surface, the surface when in use exposed to light, with a spectrally selective coating.

24. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise ferritic stainless steel alloy tray means casu quo ferritic stainless steel alloy plate means coated on at least one surface, the surface when in use exposed to light, with a spectrally selective chromium oxide coating.

25. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise glass tray means casu quo glass plate means.

26. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise polymer tray means casu quo polymer plate means.

27. The apparatus of claim **11,** wherein said highly heat conducting tray means casu quo plate means comprise a plurality of said plate means, casu quo plate means formed into a plurality of concave tray means fitting a plurality of desired cavity means for a plurality of simultaneous cooking operations for a variety of dishes casu quo meals casu quo individual portions of food.

28. The apparatus of claim **11,** wherein said transparent sheet means are made of a fluorocarbon polymer such as for example Teflon® casu quo Tefzel®.

29. The apparatus of claim **11,** wherein said first, second and third window means comprise highly transparent glass plate means having low iron content, said glass plate means having also been provided with a low reflection surface casu quo a low reflection coating on one or both of their surfaces facing incoming light.

30. The apparatus of claim **11**, wherein said first, second and third window means comprise highly transparent polymer plate means casu quo polymer sheet means casu quo polymer film means or foil means, provided with an anti-reflection coating on one or both of their surfaces facing incoming light.

31. The apparatus of claim **11**, wherein said hot box type light cooker means is made up of a transparent cavity means positioned vertically with its largest surfaces parallel to said axis of rotation of said half-barrel shaped concave reflective cavity means in the center part of said half-barrel shaped concave reflective cavity means for heating liquids casu quo for cooking soups in metal container means having walls coated with said spectrally selective coating means casu quo for sterilizing water positioned in light transparent glass or polymer bottle means in said transparent cavity means casu quo directly in said transparent cavity means by a combination of light and heat.

32. The apparatus of claim **11**, wherein two of said PV cell module means for generating electricity are positioned vertically, back to back, separated by a common vertical cooling air channel means casu quo chimney means in the center part of said half-barrel shaped concave reflective cavity means, said PV cell module means having their PV cell surfaces oriented in parallel to said axis or rotation of said half-barrel shaped concave reflective cavity means.

33. Emission credits casu quo tradable emission rights earned casu quo accruing from emissions avoided through the use of any and/or all of the means of the apparatus of claim **11**.

34. Carbon dioxide emission credits casu quo tradable carbon dioxide emission rights earned casu quo accruing from carbon dioxide emissions avoided through the use of any and/or all of the means of the apparatus of claim **11**.

35. Emission credits casu quo tradable emission rights earned casu quo accruing from emissions avoided through the use of any and/or all of the means of the apparatus of claim **11,** provided with registration number means casu quo country and/or state license plate number means qualifying said apparatus for accrual of emission credits casu quo tradable emission rights.

36. Carbon dioxide emission credits casu quo tradable carbon dioxide emission rights earned casu quo accruing from carbon dioxide emissions avoided through the use of any and/or all of the means of the apparatus of claim **11,** provided with registration number means casu quo country and/or state license plate number means qualifying said apparatus for accrual of carbon dioxide emission credits casu quo tradable carbon dioxide emission rights.